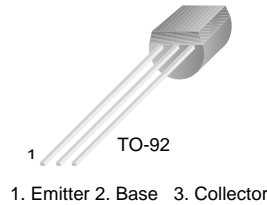


# MPSA20

## NPN General Purpose Amplifier

- Sourced from process 10



## Absolute Maximum Ratings\* $T_A=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CEO}$	Collector-Emitter Voltage	40	V
$V_{EBO}$	Emitter-Base Voltage	4	V
$I_C$	Collector current - Continuous	100	mA
$T_J, T_{stg}$	Operating and Storage Junction Temperature	-55 ~ +150	$^{\circ}\text{C}$

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### NOTES:

- These ratings are based on maximum junction temperature of 150 degrees C.
- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

## Electrical Characteristics $T_A=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Units
<b>Off Characteristics</b>						
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage	$I_C = 1\text{mA}, I_B = 0$	40			V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_C = 100\mu\text{A}, I_C = 0$	4			V
$I_{CBO}$	Collector Cutoff Current	$V_{CB} = 30\text{V}, I_E = 0$			100	nA
<b>On Characteristics</b>						
$h_{FE}$	DC Current Gain	$I_C = 5\text{mA}, V_{CE} = 10\text{V}$	40		400	
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{mA}, I_B = 1\text{mA}$			0.25	V
<b>Small Signal Characteristics</b>						
$f_T$	Current Gain Bandwidth Product	$I_C = 5\text{mA}, V_{CE} = 10\text{V}, f = 100\text{MHz}$	125			MHz
$C_{ob}$	Output Capacitance	$V_{CB} = 10\text{V}, I_E = 0, f=100\text{KHZ}$			4.0	pF

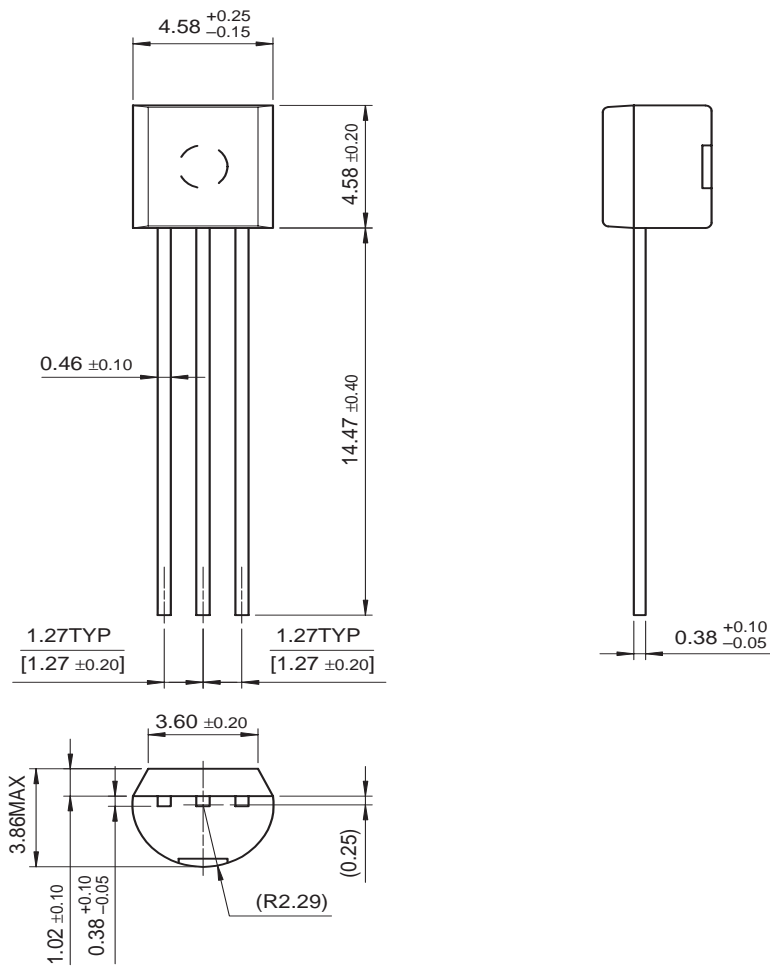
## Thermal Characteristics $T_A=25^{\circ}\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$P_D$	Total Device Dissipation Derate above $25^{\circ}\text{C}$	625 5.0	mW mW/ $^{\circ}\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	$^{\circ}\text{C/W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	200	$^{\circ}\text{C/W}$

\* Device mounted on FR-4 PCB 36mm  $\times$  18mm  $\times$  1.5mm: mounting pad for the collector lead min. 6cm.

Package Dimensions

TO-92



Dimensions in Millimeters

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FACT™	IntelliMAX™	OPTOLOGIC®	SMART START™	
FACT Quiet Series™		OPTOPLANAR™	SPM™	
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Programmable Active Droop™		Power247™	SuperSOT™-3	
		PowerEdge™	SuperSOT™-6	

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## PRODUCT STATUS DEFINITIONS

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